SESSION 4

Ordering Work

OVERVIEW

- The Energy Plan
- General Information and Contract Scope
- Phase I - Preliminary Site Survey
- Phase II - Facility Energy Audit and Economic Analysis
- The Phase II Report / Proposal
- Phase III - ECM Implementation and Operations & Maintenance

TASK ORDER (TO)

- Have a plan
- Send the ESCO where you want him
- Overlapping TOs
- Don’t kill future projects
- Maximize benefit to base
- Future activities
  - De-regulation
  - Privatization/Outsourcing
  - A-76

GENERAL INFORMATION AND CONTRACT SCOPE

- Contracting Officer's Representative (COR)
  - Designated on each task order
  - Usually the Base Energy Manager
- Access to Buildings/Contractor Work Hours
  - After hours and weekends preferred

GENERAL INFORMATION AND CONTRACT SCOPE

- Government Furnished Facility/Storage Area
  - None provided by contract
  - May be provided by task order
- Contract Scope
  - All types of energy savings
  - Base-wide facilities
  - Remote Air Force activities

PHASE I – PRELIMINARY SITE SURVEY

- Directed by letter from CO
  - List the buildings/systems the ESCO should evaluate
  - List any technology that is off-limits
  - Establish a due date - coord. with ESCO
- Overview approach to potential for savings
- Executive Summary Report

EXAMPLES OF PHASE I CONSIDERATIONS

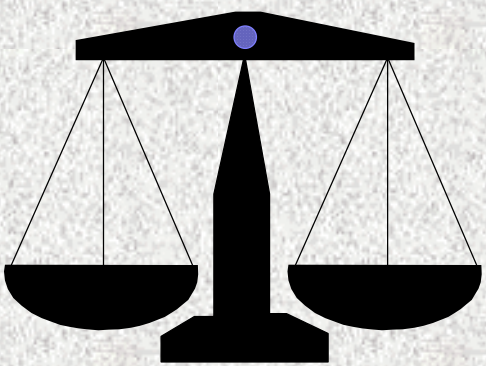
- Energy Billing Data (Historical)
- Major Energy Using Systems/Equipment Information
- Types of Systems/Equipment

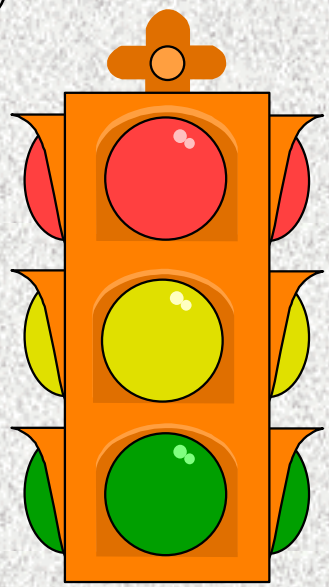
EXAMPLES OF PHASE I CONSIDERATIONS

- General Facility Information
  - Square footage by area of building
  - Temperature and relative humidity requirements
  - Occupancy and occupancy schedule
  - Required equipment operating hours
  - Mission parameters

PHASE I AUDIT REPORT

Decision Tool: Go/No Go Decision to proceed to Phase II





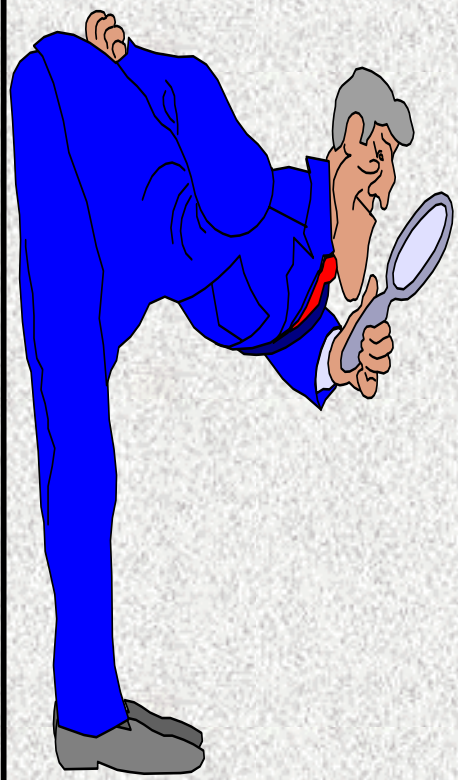
PHASE II – FACILITY ENERGY AUDIT AND ECONOMIC ANALYSIS

- Directed by letter from CO
  - Lists building(s) to be included
  - Lists any ECP identified in Phase I that is not to be considered
  - Establishes a due date for Phase II Report
    - 90, 120, 180 days is common
    - Up to a year may be necessary
      - Time needed to validate baseline

PHASE II – FACILITY ENERGY AUDIT AND ECONOMIC ANALYSIS

- Detailed (investment grade) audit
  - Must be well organized and planned
  - Must be realistic
  - Requires multiple disciplines
  - Can be expensive and time consuming
  - Must be comprehensive

EXAMPLES OF OPPORTUNITY AREAS



- Building Envelope
- HVAC Equipment
- HVAC Distribution Systems
- Water Heating Systems
- Lighting Systems
- Power Systems
- Energy Management Control Systems
- Water Consuming Systems

EXAMPLES OF HVAC EQUIPMENT ECPs

- Reduce Ventilation
- Improve Chiller Efficiency
- Improve Boiler/Furnace Efficiency
- Improve Air-Conditioner or Heat Pump Efficiency
- Reduce Energy use for Tempering Supply Air
- Use Energy-Efficient Cooling Systems

EXAMPLES OF HVAC DISTRIBUTION SYSTEM ECPs

- Reduce Distribution System Energy Losses
- Reduce System Flow Rates
- Reduce System Resistance
- Reduce Hot Water Loads
- Reduce Hot Water System Losses
- Use Energy-Efficient Water Heating Systems

EXAMPLES OF LIGHTING AND POWER SYSTEMS ECPs

- Reduce Illumination Requirements
- Install Energy-Efficient Lighting Systems
- Use Day-lighting
- Reduce Power System Losses
- Install Energy-Efficient Motors
- Reduce Peak Power Demand

EXAMPLES OF ENERGY MANAGEMENT SYSTEMS ECPs

- Temperature Setup/Setback
- Time-of-Day
- Duty-Cycling
- Supply Air Temperature Reset
- Hot/Chilled Water Supply Temperature Reset
- Ventilation Purging
- Economizer Cooling
- Demand Limiting

PHASE II REPORT

- **EXHIBIT A - Synopsis of Proposed ECM and Technical Proposal**
  - Synopsis/Overview
  - Complete and Detailed Technical Proposal
  - Proposed Financing Agreements

PHASE II REPORT

- **EXHIBIT B - Calculations of Savings and Measurement and Verification (M&V) Plan**
  - Supports Estimated Energy and Demand Savings (Btu, kwh, kw, etc.)
  - Identifies Estimated Cost Savings ($)
  - Provides the “Guaranteed Savings”
  - Proposed M&V Plan

PHASE II REPORT

- **EXHIBIT C - ESCO Compensation Format**
  - Proposed Payment Schedule
    - Pro rated based only on Guaranteed Savings
    - May change on yearly basis
    - May or may not provide for sharing
    - Supported by cost breakdown - Figure C-1

SAMPLE FIG. C-1

BLDG(s) #	ECP #	YEAR	ECP ANNUAL COST	ANNUAL GUARANTEED SAVINGS AMOUNT (GSA)	ESCO's ANNUAL SHARE OF GSA (percentage %)	ESCO's ANNUAL SHARE OF GSA (dollars $)	GOV'T ANNUAL SHARE OF GSA (percentage %)	GOV'T ANNUAL SHARE OF GSA (dollars $)
	1	1						
	1	2						
	1	3						
ECP #1 TOTAL								
BLDG(s) #	2	1						
	2	2						
	2	3						
ECP #2 TOTAL								
BLDG(s) #	1	1						
	1	2						
	1	3						
ECP TOTAL								
ECM Total								

Figure C-1

PHASE II REPORT

- **EXHIBIT D - Buildings**
  - Identifies function of each building included in the report
- **EXHIBIT E - Baseline Data**
  - States all assumptions
  - Documents historical/future energy use
  - Documents historical/future O&M costs
  - Provides basis for validating savings

PHASE II REPORT

- **EXHIBIT F - ESCO Post-Implementation Responsibilities**
  - Functions the ESCO proposes to be performed throughout life of the task order
    - May be operations or maintenance related
    - May continue for 20+ years
  - Government must evaluate cost and impact
    - Possible major impact on savings guarantees
    - Must evaluate ability to perform M&V
    - Must evaluate potential staffing impact

PHASE II REPORT

- **EXHIBIT G - Government Post-Implementation Responsibilities**
  - Functions the ESCO **proposes** the Gov't perform throughout life of task order
  - Gov't should use similar evaluation process as used for Exhibit F
    - Impact on savings guarantees?
    - Ability to perform M&V of savings?
    - Impact and availability of manpower

PHASE II REPORT

- **EXHIBIT H - Standards of Services**
  - ESCO Proposed changes in service levels
    - Lighting level increases/decreases
    - Changes in temperature control settings
  - Gov't must closely scrutinize the effects of accepting proposed changes
    - Often referred to during acceptance inspection

PHASE II REPORT

- **EXHIBIT I - Final Performance Tests**
  - Outlines performance testing procedures proposed for the Government acceptance testing and identifies who will conduct the testing.
  - Each system to be tested will be identified with a cross-reference to the standard of performance the contractor proposes in EXHIBIT H.

PHASE II REPORT

- **EXHIBIT J - Equipment Availability and ECM Implementation Schedule**
  - High demand items have longer lead times
  - Screening tool for potential delays
    - Do not remove old equipment before new equipment is received
  - Proposed implementation schedule should be reviewed for realism and timeliness

PHASE II REPORT

- **EXHIBIT K - Termination or Buyout Costs**
  - Proposed cancellation or buyout schedule
  - Representative of the balance of payments
    - Includes principal, prepayment penalties, rebate/incentives repayment, etc.
  - Must be kept current after each negotiation
  - Indicator for Congressional Notification
    - Exhibit K > $750K

PHASE II REPORT

- **EXHIBIT L - Pre-existing equipment**
  - Inventory of equipment to be replaced
- **EXHIBIT M - Subcontracting Plan**
  - Identifies work that will be subcontracted
  - Should comply with basic contract plan
  - Explains absence of subcontracting
- **EXHIBIT N - ECPs Evaluated**
  - Lists and explains all ECPs that were evaluated, but NOT recommended

GOV'T RESPONSE TO PHASE II REPORT

- ESPC is a joint venture/partnership and all energy saving work proposed by the ESCO will be accepted by the AF unless there are compelling reasons not to implement.
- The AF has three choices for each Phase II
  - Accept - Issue task order
  - Return for changes/corrections
  - Reject - Must be for cause as established in the contract

REJECTION OF PHASE II REPORT

- The Gov't may reject (not implement) the proposed energy saving work if:
  - Gov't and ESCO cannot agree on either the baseline or the M&V method
  - The economic payback for the total ECM exceeds 10 years
  - The proposed ECP/M is not reasonably practical and workable for the installation

REJECTION OF PHASE II REPORT

- The Gov't determines the ECP/M could be detrimental to the national defense mission or quality of life of the installation
- ECM implementation cost cannot be paid from the savings generated by the ECM
- The status of the facility, or facilities, is such that it is not in the best interest of the Gov't to incur the investment liabilities for energy improvements

PHASE III

- Phase III work shall be directed by contract task order (vice letter for Phase I and II)
- Period of performance may be 10 yrs or more
- Schedules and permits
- Environmental requirements
- Inspection and Acceptance

PHASE III

- Equipment Maintenance
  - Scheduled
  - Unscheduled
    - Response times
- Training of Gov't Personnel
  - Immediately following implementation
  - Just prior to task order completion
- Utility Rates Changes
- Budgeting

EQUIPMENT OWNERSHIP

- Ownership Responsibilities remain with the ESCO (we are buying energy savings)
  - Replacement in kind without approval
  - Change in make or model requires approval
- Financier may have security interest
  - CO approval required
- Title passes to AF upon completion
- Ownership responsibilities negotiable

SUMMARY

- Review of Section C
- Three phased approach
- Phase II at heart of contract
  - Proposal
  - Task order work statement
- Good faith partnership between ESCO and AF
- Phase III occurs over many years
- Ownership and title generally pass upon completion of task order

QUESTIONS?